

1 Amendment to the Claims

2 In the Claims:

3 Please amend Claims 1, 8 and 13 as follows:

4 1. (Currently Amended) A computer-implemented method for allocating items to an
5 available inventory of empty item slots, comprising:

6 determining a number of item slots available in an inventory that are empty, such
7 that each item slot that is empty can be filled by both an item having a corresponding
8 characteristic, and a single item having the corresponding characteristic will fill the empty item
9 slot;

10 constructing a plurality of organizing the item slots that are empty into item slot
11 groups, each different item slot group having a predefined number of including only those item
12 slots, each item slot initially unfilled and able to be filled by an item which can be filled by
13 items having the same characteristic;

14 allocating each of a plurality of items of a first type to the item slots of the item
15 slot groups that are unfilled by matching characteristics of the first type of items to
16 characteristics of the item slot groups, such that allocating an item to an item slot fills the item
17 slot with the item;

18 allocating each of a plurality of items of a second type to the item slots of the item
19 slot groups that are unfilled by items of the first type by matching characteristics of the
20 second type of items to the characteristics of the item slot groups, such that allocating an item
21 to an item slot fills the item slot with the item; and

22 displaying the plurality of item slot groups as a histogram having a plurality of
23 bars, where each bar corresponds to an item slot group and has a height corresponding to the
24 number of item slots of the item slot group, wherein the bar has an indication as to how many
25 of the number of item slots of the item slot group are filled and how many of the number of
26 item slots of the item slot group are unfilled.

27 2. (Original) The method of claim 1, wherein each item comprises an ad and each item
28 slot group comprises a web site, such that each item slot of the item slot group corresponds to an
29 advertising space on the web site on which an ad can be shown.

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1 3. (Original) The method of claim 2, wherein the first type of the plurality of items
2 comprises member ads, and the second type of the plurality of items comprises sponsor ads.

3 4. (Original) The method of claim 1, wherein each of the plurality of items of the first
4 type has a fill quota, wherein allocating each of the plurality of the items of the first type
5 comprises filling a number of item slots of the item slot groups that are unfilled with the item
6 equal to the quota.

7 5. (Original) The method of claim 4, wherein allocating each of the plurality of the items
8 of the first type further comprises filling the number of item slots of the item slot groups that are
9 unfilled with the item equal to the quota proportionally as to the item slots unfilled of the item
10 slot groups having characteristics matching the characteristics of the item.

11 6. (Original) The method of claim 1, wherein each of the plurality of items of the second
12 type has a fill quota, wherein allocating each of the plurality of the items of the second type
13 comprises filling a number of item slots of the item slot groups that are unfilled with the item
14 equal to the quota.

15 7. (Original) The method of claim 6, wherein allocating each of the plurality of the items
16 of the second type further comprises filling the number of item slots of the item slot groups that
17 are unfilled with the item equal to the quota proportionally as to the item slots unfilled of the
18 item slot groups having characteristics matching the characteristics of the item.

19 8. (Currently Amended) A computer-implemented method for allocating items to an
20 available inventory of empty item slots, comprising:

21 determining a number of item slots available in an inventory that are empty, such
22 that each item slot that is empty can be filled by both an item having a corresponding meta
23 characteristic, and an item having both a corresponding meta characteristic and a corresponding
24 group characteristic, and a single item having the corresponding characteristic will fill the empty
25 item slot;

26 constructing a plurality of organizing the item slots that are empty into item slot
27 groups, each group having a number of item slots, each item slot initially unfilled and able to be
28 filled by an item a different slot group being constructed for each different group characteristic,
29 such that each item slot that can be filled an item having that group characteristic is included in
30 that item slot group;

7 allocating each of a plurality of items of a first type over the meta item slots of the
8 meta item slot groups that are unfilled by matching meta characteristics of the first type of item
9 items to characteristics of the meta item slot groups slots, such that the meta item slots are filled
10 only by items of the first type having the same meta characteristic, and allocating an item of the
11 first type to an a meta item slot fills the meta item slot with the item;

allocating each of a plurality of items of a second type over both the meta item slots of the meta item slot groups that are unfilled and the item slots of the item slot groups that are unfilled by items of the first type by matching characteristics of the second type of items to the characteristics of the meta item slot groups, such that the meta item slots are filled only by items of the second type having the same meta characteristic, and allocating an item of the second type to an meta item slot fills the meta item slot with the item, thereby determining a number of items of the second type required to fill all meta item slots unfilled by items of the first type; and

19 for each item of the second type that is allocated to a meta item slot, also allocating
20 that item of the second type to an item slot that is unfilled by matching characteristics of the item of
21 the second type to the characteristics of the item slot groups, such that each item slot is filled only by
22 items of the second type having the same group characteristic and the same meta characteristic, and
23 allocating an item of the second type to an item slot fills the item slot with the item; and

24 for each item of the first type that is allocated to a meta item slot, also allocating
25 each of the plurality of items that item of the first type over the item slots of the item slot groups
26 that are unfilled, to an item slot that is unfilled by an item of the second type by matching
27 characteristics of the first type of items to characteristics of the item slots, such that each item
28 slot is filled only by items of the first type having the same meta characteristic, and allocating an
29 item of the first type to an item slot fills the item slot with the item, thereby allocating items to an
30 available inventory of empty item slots.

1 9. (Currently Amended) The method of claim 8, further comprising:

2 displaying the plurality of item slot groups as a first histogram having a plurality
3 of bars, where each bar corresponds to an item slot group and has a height corresponding to the
4 number of item slots of the item slot group, wherein the bar has an indication as to how many of
5 the number of item slots of the item slot group are filled and how many of the number of item
6 slots of the item slot group are unfilled; and,

7 displaying the plurality of meta item slot groups as a second histogram having a plurality
8 of bars, where each bar corresponds to a meta item slot group and has a height corresponding to the number of meta item slots of the meta item slot group, wherein the bar has an indication as to how many of the number of meta item slots of the meta item slot group are filled and how many of the number of meta item slots of the meta item slot group are unfilled.

13 10. (Currently Amended) The method of claim 8, wherein each item comprises an ad,
14 each item slot group comprises a web site, and each meta item slot group comprises at least one
15 web site having similar characteristics, such that each item slot of the item slot group
16 corresponds to an advertising space on the web site on which an ad can be shown, and each meta
17 item slot of the meta item slot group corresponds to an advertising space on a web site of the
18 meta item slot group on which an ad can be shown.

19 11. (Original) The method of claim 10, wherein the first type of the plurality of items
20 comprises member ads, and the second type of the plurality of items comprises sponsor ads.

21 12. (Original) The method of claim 8, wherein each of the plurality of the items of the
22 first type and each of the plurality of the items of the second type has a fill quota, wherein
23 allocating each of the plurality of the items comprises filling a number of item slots that are
24 unfilled with the item equal to the quota.

25 13. (Currently Amended) A computer-implemented method for allocating items to an
26 available inventory of empty item slots, comprising:

27 determining a number of item slots available in an inventory that are empty, such
28 that each item slot that is empty can be filled by an item having a corresponding meta
29 characteristic, an item having a corresponding meta characteristic and a corresponding group
30 characteristic, and an item having a corresponding meta characteristic, a corresponding group

1 characteristic, and a corresponding sub group characteristic, a single item having the
2 corresponding characteristic will fill the empty item slot;

3 ~~constructing a plurality of organizing the item slots that are empty into sub item~~
4 ~~slot groups, each sub group having a number of item slots, each item slot initially unfilled and~~
5 ~~able to be filled by an item, such that each different sub item slot group includes only those item~~
6 ~~slots that can be filled by items having the same meta group, group and sub group characteristics;~~

7 ~~constructing a plurality of organizing the sub item slot groups into item slot~~
8 ~~groups, each group encompassing at least one sub item slot group and having a number of item~~
9 ~~slots equal to a total number of item slots of the at least one sub item slot group the group~~
10 ~~encompasses, each item slot initially unfilled and able to be filled by an item such that each~~
11 ~~different item slot group includes only those sub item slot groups whose item slots that can be~~
12 ~~filled by items having the same meta and group characteristics;~~

13 ~~constructing a plurality of meta item slot groups group for each different meta~~
14 ~~characteristic that can be used to fill an item slot, each meta item slot group encompassing at~~
15 ~~least one item slot group and having a number of meta item slots equal to a total number of item~~
16 ~~slots of the at least one item slot group the meta item slot group encompasses, that can be filled~~
17 ~~by items having the same meta characteristic, each meta item slot initially unfilled and able to be~~
18 ~~filled by an item having a corresponding meta characteristic, an item having a corresponding~~
19 ~~meta characteristic and a corresponding group characteristic, and an item having a corresponding~~
20 ~~meta characteristic, a corresponding group characteristic, and a corresponding sub group~~
21 ~~characteristic, a single item having the corresponding characteristic will fill the empty meta item~~
22 ~~slot;~~

23 ~~allocating a plurality of items of a first type over the meta item slots of the meta~~
24 ~~item slot groups that are unfilled by matching meta characteristics of the items first type of items~~
25 ~~to meta characteristics of the meta item slot groups, such that allocating an item to an a meta item~~
26 ~~slot fills the meta item slot with the item;~~

27 ~~allocating each of a plurality of items of a second type over the meta item slots of~~
28 ~~the meta item slot groups that are unfilled, the item slots of the item slot groups that are unfilled,~~
29 ~~and the item slots of the sub item slot groups that are unfilled, by matching characteristics of the~~
30 ~~second type of items to respective characteristics of the meta item slot groups, of the item slot~~

1 groups, and of the sub item slot groups, such that allocating an item to an item slot fills the item
2 slot with the item, and allocating an item to a meta item slot fills the meta item slot with the item;
3 and,

4 allocating each of a plurality of items of a second type over the meta item slots of the
5 meta item slot groups that are unfilled by items of the first type, the item slots of the item slot groups
6 that are unfilled, and the item slots of the sub item slot groups that are unfilled, by matching meta
7 characteristics, group characteristics and sub group characteristics of the second type of items to
8 respective characteristics of the sub item slot groups of the meta item slots, such that allocating an
9 item to an item slot fills the item slot with the item, thereby determining how many items of the
10 second type are needed to fill the meta item slots unfilled by items of the first type; and,

11 for each item of the second type that is allocated to a meta item slot, also
12 allocating that item of the second type to an item slot that is unfilled by matching meta, group
13 and sub group characteristics of the item of the second type to the meta, group and sub group
14 characteristics of the item slot, such that each item slot is filled only by items of the second type
15 having the corresponding meta, group and sub group characteristics, and allocating an item of the
16 second type to an item slot fills the item slot with the item; and

17 for each item of the first type that is allocated to a meta item slot, also allocating
18 each of the plurality of items that item of the first type over the item slots of the item slot groups
19 that are unfilled and the item slots of the sub item slot groups that are unfilled to an item slot that
20 is unfilled by an item of the second type by matching meta characteristics of the first type of
21 items to meta characteristics of the item slots, such that each item slot is filled only by items of
22 the first type having the same meta characteristic, and allocating an item to an item slot fills the
23 item slot with the item, thereby allocating items to an available inventory of empty item slots.

24 14. (Currently Amended) The method of claim 13, further comprising the steps of:

25 displaying the plurality of item slot groups as a first histogram having a plurality
26 of sub-bars organized into a plurality of bars, where each sub-bar corresponds to a sub item slot
27 group and has a height corresponding to the number of item slots of the sub item slot group,
28 wherein the sub-bar has an indication as to how many of the number of item slots of the sub item
29 slot group are filled and how many of the number of item slots of the sub item slot group are
30 unfilled; and,

1 displaying the plurality of meta item slot groups as a second histogram having a
2 plurality of bars, where each bar corresponds to a meta item slot group and has a height
3 corresponding to the number of meta item slots of the meta item slot group, wherein the bar has
4 an indication as to how many of the number of meta item slots of the meta item slot group are
5 filled and how many of the number of meta item slots of the meta item slot group are unfilled.

6 15. (Currently Amended) The method of claim 13, wherein each item comprises an ad,
7 each item slot group comprises a web site, each sub item slot group comprises a viewer type of
8 web site, and each meta item slot group comprises at least one web site having similar
9 characteristics, such that each item slot of the sub item slot group corresponds to an advertising
10 space on the web site on which an ad can be shown to a particular viewer type, each item slot of
11 the item slot group corresponds to an advertising space on the web site on which an ad can be
12 shown, and each meta item slot of the meta item slot group corresponds to an advertising space
13 on a web site of the meta item slot group on which an ad can be shown.

14 16. (Original) The method of claim 15, wherein the first type of the plurality of items
15 comprises member ads, and the second type of the plurality of items comprises sponsor ads.

16 17 18 19 17. (Original) The method of claim 13, wherein each of the plurality of the items of the first type and each of the plurality of the items of the second type has a fill quota, wherein allocating each of the plurality of the items comprises filling a number of item slots that are unfilled with the item equal to the quota.

Please add new Claims 18-21 as follows:

--18. (New) A method for distributing items of a first type and items of a second type into item slots arranged in a plurality of item slot groups, wherein items of the second type are defined with a greater granularity than items of the first type, such that items of the second type can have group and meta characteristics, while items of the first type have meta characteristics but not group characteristics, comprising the steps of

26 providing:

27 a plurality of items of the first type, each item of the first type having a
28 meta characteristic;

29 a plurality of items of the second type, each item of the second type having
30 both a group characteristic and a meta characteristic;

a plurality of item slots, such that each item slot has both a meta characteristic and a group characteristic, each item slot is initially unfilled, each item slot is able to be filled by an item of the first type having the corresponding meta characteristic, and each item slot is able to be filled by an item of the second type having the corresponding meta characteristic and the corresponding group characteristic;

using the plurality of item slots, constructing a plurality of item slot groups, such that item slots having the same group characteristic are included in the same item slot group;

constructing a meta item slot group for each different meta characteristic, each meta item slot group so constructed including a number of meta item slots equal to the number of the item slots sharing the same meta characteristic, each meta item slot being initially unfilled, and able to be filled by an item of the first type having the same meta characteristic, and an item of the second type having the same meta characteristic;

allocating each of the plurality of items of the first type over the meta item slots that are unfilled by matching meta characteristics of the first type of items to meta characteristics of the meta item slots, such that allocating an item to a meta item slot fills the meta item slot with the item;

allocating each of the plurality of items of the second type over the meta item slots that are not already filled by items of the first type, by matching meta characteristics of the second type of items to meta characteristics of the meta item slots, such that allocating an item to a meta item slot fills the meta item slot with the item, thereby determining a number of items of the second type required to fill all meta item slots unfilled by items of the first type;

for each item of the second type allocated over a meta item slot, also allocating that item of the second type over an item slot in an item slot group by matching meta and group characteristics of the item of the second type to respective meta and group characteristics of the item slot, such that allocating an item to an item slot fills the item slot with the item; and

for each item of the first type allocated over a meta item slot, also allocating that item of the first type over an unfilled item slot in an item slot group by matching meta characteristics of the item of the first type of items to meta characteristics of the item slot, such that allocating an item to an item slot fills the item slot with the item, thereby distributing items of the first type and items of the second type into item slots arranged in a plurality of item slot groups.

19. (New) A method for distributing items of a first type and items of a second type into item slots arranged in a plurality of sub item slot groups and item slot groups, wherein items of the second type are defined with a greater granularity than items of the first type, comprising the steps of

providing:

a plurality of items of the first type, each item of the first type having a meta characteristic;

a plurality of items of the second type, each item of the second type having a sub group characteristic, a group characteristic, and a meta characteristic;

a plurality of item slots, such that each item slot has a meta characteristic, a group characteristic, and a sub group characteristic, each item slot is initially unfilled, each item slot is able to be filled by an item of the first type having the corresponding meta characteristic, and each item slot is able to be filled by an item of the second type having the corresponding meta characteristic, the corresponding group characteristic, and the corresponding sub group characteristic, a single item having the corresponding characteristic filling the empty item slot;

organizing the plurality of item slots into sub item slot groups, such that each different sub item slot group includes only those item slots that can be filled by items having the same meta characteristics, group characteristics and sub group characteristics;

organizing the sub item slot groups into item slot groups, such that each different item slot group includes only those sub item slot groups whose item slots that can be filled by items having the same meta characteristics and group characteristics;

constructing a meta item slot group for each different meta characteristic of the item slots, each meta item slot group including a number of meta item slots equal to the number of the item slots having the same meta characteristic, each meta item slot being initially unfilled, and able to be filled by each of an item of the first type having the corresponding meta characteristic, and an item of the second type having the corresponding meta characteristic, the corresponding group characteristic, and the corresponding sub group characteristic, such that a single item having the corresponding characteristic will fill the empty meta item slot;

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1 allocating each of the plurality of items of the first type over the meta item slots
2 that are unfilled by matching meta characteristics of the first type of items to the meta item slots,
3 such that allocating an item to a meta item slot fills the meta item slot with the item;

4 allocating each of the plurality of items of the second type over the meta item slots
5 that are not already filled by items of the first type, by matching meta characteristics, group
6 characteristics and sub group characteristics of the second type of items to the meta item slots,
7 such that allocating an item to a meta item slot fills the meta item slot with the item, thereby
8 determining a number of items of the second type required to fill all meta item slots unfilled by
9 items of the first type;

10 for each item of the second type that is allocated over a meta item slot, also
11 allocating that item of the second type over an item slot in a sub item slot group by matching
12 meta characteristics, group characteristics and sub group characteristics of the second type of
13 items to the item slots, such that allocating an item to an item slot fills the item slot with the item,
14 thereby filling the item slots with the same number of items of the second type that filled the
15 meta item slots;

16 for each item of the first type allocated over a meta item slot, also allocating that
17 item of the first type over an unfilled item slot in an item slot group by matching meta
18 characteristics of the item of the first type of items to meta characteristics of the item slot, such
19 that allocating an item to an item slot fills the item slot with the item, thereby distributing items
20 of the first type and items of the second type into item slots arranged in a plurality of sub item
21 slot groups.

22 20. (New) A method for allocating items to an available inventory of empty item slots,
23 comprising:

24 determining a number of item slots available in an inventory that are empty;

25 organizing the item slots that are empty into item slot groups, such that each item
26 slot group includes only those item slots that can be filled by closely related items;

27 constructing a meta item slot group for each different broad characteristic that is
28 shared by different types of closely related items that can fill the item slots, and for each type of
29 closely related items that can fill the item slots that does not share a broad characteristic with any
30 other type of closely related items that can fill the item slots, each meta item slot group having a

1 number of meta item slots equal to a total number of item slots in the item slot groups upon
2 which that meta item slot group is based on, each meta item slot being initially unfilled, each
3 item slot of a specific item slot group being able to be filled by an item which can fill the items
4 slots in the item slot groups upon which that item slot group is based;

5 allocating a plurality of items of a first type over the meta item slots by matching
6 broad characteristics of the first type of items to broad characteristics of the meta item slot, such
7 that allocating an item to a meta item slot fills the meta item slot with the item;

8 allocating a plurality of items of a second type over the meta item slots that are
9 not filled by items of the first type by matching closely related characteristics of the second type
10 of items to the meta item slot, such that each meta item slot not filled by an item of the first type
11 is filled by a closely related item of the second type, where the closely related item of the second
12 type would also fill the item slot upon which that meta item slot is based upon, and allocating an
13 item to a meta item slot fills the meta item slot with the item, thereby determining how many
14 items of the second type can be accommodated in the item slots;

15 for each item of the second type that is allocated to a meta item slot, also
16 allocating that item of the second type to an item slot that is unfilled, such that each item slot that
17 is filled is filled by a closely related item of the second type, thereby filling a first portion of the
18 item slots;

19 for each item of the first type that is allocated to a meta item slot, also allocating
20 that item of the first type to an item slot that is unfilled by an item of the second type, thus filling
21 the remaining portion of the item slots, by matching broad characteristics of the first type of
22 items to broad characteristics of the item slot, such that each item slot is filled only by items of
23 the first type having the same broad characteristic, and allocating an item to an item slot fills the
24 item slot with the item, thereby allocating items of the first type and the second type to the
25 available inventory of empty item slots.

26 21. (New) A computer-implemented method comprising:

27 constructing a plurality of item slot groups, each item slot group having a number
28 of item slots, each item slot initially unfilled and able to be filled by an item;

29 constructing a plurality of meta item slot groups, each meta item slot group
30 encompassing at least one item slot group and having a number of meta item slots equal to a total

1 number of item slots of the at least one item slot group the meta item slot group encompasses,
2 each meta item slot initially unfilled and able to be filled by an item;

3 allocating each of a plurality of items of a first type over the meta item slots of the
4 meta item slot groups that are unfilled by matching characteristics of the first type of items to
5 characteristics of the meta item slot groups, such that allocating an item to a meta item slot fills
6 the meta item slot with the item;

7 allocating each of a plurality of items of a second type over both the meta item slots
8 of the meta item slot groups that are unfilled and the item slots of the item slot groups that are
9 unfilled by matching characteristics of the second type of items to the respective characteristics of
10 the item slot groups and the meta item slot groups, such that allocating an item to an item slot fills
11 the item slot with the item, and allocating an item to a meta item slot fills the meta item slot with
12 the item; and,

13 for each meta item slot group, allocating each of the plurality of items of the first
14 type that have been allocated to a meta item slot over the item slots of the at least one item slot
15 group encompassed by that meta item slot group that are unfilled, by matching characteristics of
16 the first type of items to characteristics of the at least one item slot group encompassed by that
17 meta item slot group, such that allocating an item to an item slot fills the item slot.--

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